

This article was downloaded by: [USDA National Agricultural Library]

On: 1 October 2008

Access details: Access Details: [subscription number 790740002]

Publisher Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Ecology of Food and Nutrition

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title-content=t713641148>

Difficulties of Field Methodology Associated with an Experiential Learning Project

Deirdra Chester ^a; Ellen Harris ^a

^a Community Nutrition Research Group, Beltsville Human Nutrition Research Center, Agricultural Research Service, USDA, Beltsville, Maryland, USA

Online Publication Date: 01 March 2007

To cite this Article Chester, Deirdra and Harris, Ellen(2007)'Difficulties of Field Methodology Associated with an Experiential Learning Project',*Ecology of Food and Nutrition*,46:2,91 — 99

To link to this Article: DOI: 10.1080/03670240701282480

URL: <http://dx.doi.org/10.1080/03670240701282480>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

DIFFICULTIES OF FIELD METHODOLOGY ASSOCIATED WITH AN EXPERIENTIAL LEARNING PROJECT

**DEIRDRA CHESTER
ELLEN HARRIS**

Community Nutrition Research Group, Beltsville Human
Nutrition Research Center, Agricultural Research
Service, USDA, Beltsville, Maryland

An experiential learning project through the USDA Food and Nutrition Summer Institute focuses on diabetes and obesity in the African American community by addressing nutrition and physical activity among children. In this phase of the project, students from five historically black colleges and universities (HBCUs) identified community partners and tested the feasibility of using several instruments for a future intervention. Seventy-four children and 31 parents completed a modified USDA Diet and Health Knowledge Survey questionnaire; socio-demographic, physical activity, and anthropometric datasheets; and Block Food Frequency Questionnaires. Students faced several challenges in collecting food and behavior information, including respondent burden, appropriateness of questionnaires, and technology difficulties.

KEYWORDS nutrition, physical activity, children, parents, African American, experiential learning

INTRODUCTION

A research and education project was developed through the USDA Food and Nutrition Summer Institute, a program designed to help

Address correspondence to Deirdra Chester, Research Associate, Community Nutrition Research Group, Beltsville Human Nutrition Research Center, Agricultural Research Service, USDA, Bldg. 005, Rm. 120, Beltsville, MD 20705. E-mail: deirdra.chester@ars.usda.gov

strengthen dietetic and nutrition-related research and education programs at historically black colleges and universities (HBCUs). The education component of this project involved training students on how to design and conduct a research study. The research component involved carrying out some aspect of the study. To accommodate entry and exit of new students each year the project is divided into several phases. Both undergraduate and graduate nutrition and dietetic students from five universities participated in this phase of the project. The project's ultimate aim is to focus on diabetes and obesity in the African American community and address these problems through nutrition and physical activity among children.

Two years of the project have been completed. In year 1, the purpose of the project was to identify barriers to healthy eating and physical activity. Students from six HBCUs and one Tribal College, who attended the USDA Food and Nutrition Summer Institute, helped plan and conduct the study in partnership with USDA and the U.S. Army Research Lab. They identified and mapped food and physical activity outlets in their respective university communities.

Each university community was defined by $\frac{1}{2}$ mile increments from the main campus until a major grocery store was reached. This distance became the radius for the community boundary, however, geography necessitated revisions to this plan for each site. Opportunities for healthy eating were defined as 1) the availability of grocery stores, restaurants, convenience stores, fast food outlets, vendors, food programs, and farmers markets, and 2) the types of food available through these outlets. Foods were divided into grains, vegetables, fruits, milk products, meat and meat alternates, other foods (such as low-fat and low sodium), and fast food. Opportunities for physical activity were defined as the availability of parks, public recreational centers, swimming pools, school gyms, presence of sidewalks and bike paths, and the types of physical activity available through these outlets.

Year 1 findings included the following. Grocery stores were not the predominant food outlet in any of the university communities. The top two food outlets for three University communities were convenience stores (CS) and fast food (FF) outlets, while CS and restaurants (R) were the top two outlets for the other three communities. Most CS had canned vegetables and fruit, while 100% fruit juice was found in several outlets. Fresh vegetables were found at most FF and R in the Salish Kootenai Tribal College community and at most FF in the Southern University community. Fresh fruit and vegetables were found at half of the restaurants

in the University of Arkansas at Pine Bluff community, whereas, dark green/yellow veggies were found at half of the restaurants in the Howard University community. Throughout all of the University communities, physical activity outlets varied and included playgrounds, public recreation areas, parks, school gyms, and walking paths. However, in several instances they were on school campuses or privately owned, which limited access. Findings from year 1 introduced students to the constructs of studying nutrition, physical activity, and environment and enhanced their understanding of their respective university communities and how environment might or might not support a diabetes prevention initiative.

Year 2, which is presented in this article, focused on identifying community partners and testing the feasibility of using several instruments for a future intervention. The main objective of this pilot study was to test the mean time administration and burden of these questionnaires.

METHODS

An undergraduate or graduate student from each university was responsible for selecting a community partner and site for data collection. During the project, students were awarded a monthly stipend. Each student also used their findings for presentation at meetings, senior projects or as master's thesis. The students worked with community partners to facilitate data collection, set up the data collection times, recruit respondents, and collect data. Volunteers were recruited from five HBCU communities and the sample was drawn from several different community partner settings: a day care center, elementary school, middle school, community center, and church. Each participating university received approval from their respective Institutional Review Board Human Subjects Committees to conduct the pilot study. Written informed consent was obtained from the children and parents who participated. After completing the questions, each participant was provided a fruit and vegetable beanie baby.

Each student was asked to solicit a minimum of at least 15 children and five parents from each university community setting. Respondents who met the following criteria were included in the pilot study:

- (a) Children, age 4–13 years of age
- (b) Live in the area designated in each community setting
- (c) Parents of the children who participated in the study

Each student was trained on how to collect data and how to answer pertinent questions relevant to the data collection process. Monthly conference calls and Spectel Web Conferencing (www.avaya.com) were used to train students on data collection techniques. During the monthly conference calls students were asked to present preliminary findings in order to troubleshoot and perfect the data collection process.

Interviews with the youngest group of children included a parent proxy. All of the instruments were computerized and hard copies of each questionnaire were provided to the students. Six instruments were used to collect data. Information on socio-demographic, physical activity, and anthropometrics was collected. Parents were interviewed using the Block Brief 2000 Food Frequency Questionnaire (FFQ) and children were interviewed using the Block Kids FFQ (Block et al., www.Nutritionquest.com).

After a review of the literature did not reveal an appropriate instrument, the Diet and Health Knowledge Survey (DHKS) was modified to simplify the questions for the pilot study (USDA, Food Surveys Research Group). Several questions considered out of the scope of the pilot study were eliminated such as measures of specific health problems caused by eating certain foods, foods with total and saturated fat, foods with cholesterol, categorizing foods by descriptors (i.e., light, healthy extra lean), and foods with high or low specific nutrients. Specific food frequency questions also were eliminated. This modified instrument (mDHKS) was used with the children and their parents.

RESULTS

A total of 105 respondents completed the questionnaires. Seventy-four children and 31 parents were interviewed. There were 26 children aged 4 to 6; 26 children aged 7 to 10; 22 children aged 11 to 13; and 31 parent respondents. Seventy percent of the respondents were female. Fifty-two percent of the respondents resided in Alabama, followed by those in both Louisiana and North Carolina (19% each), and those from the District of Columbia (10%).

Mean time administrations for the questionnaires are listed in Table 1. The mean time administration for the mDHKS (27 minutes) was computed, however, outliers were not used in the calculation. Outliers were those questionnaires that took less than 10 minutes to complete and more than 2 hours to complete. Anthropometric data times were not

Table 1. Mean interview times by age groups in minutes

Variable	N	Mean	Maximum	Minimum
Children age 4 to 6 years old (with parent proxy)				
FFQ	5	20.60	30.00	16.00
mDHKS	17	29.09	57.00	10.00
Physical activity	26	9.01	27.00	1.20
Socio-demographic	26	3.61	18.00	0.62
Children age 7 to 10 years old				
FFQ	4	29.50	45.00	20.00
mDHKS	13	23.22	61.00	10.00
Physical activity	26	7.53	33.00	1.37
Socio-demographic	26	2.61	11.00	0.58
Children age 11 to 13 years old				
FFQ	5	23.40	34.00	16.00
mDHKS	7	31.05	103.28	16.92
Physical activity	22	5.12	14.00	0.45
Socio-demographic	22	2.35	12.02	0.65
Parents				
FFQ	5	26.60	46.00	16.00
mDHKS	12	26.98	116.02	12.03
Physical activity	31	4.08	13.95	0.25
Socio-demographic	31	2.21	6.00	0.85

reported because each measurement for children and self-reporting by adults took less than 1 minute to complete. The average administration time for the computerized FFQ was 25 minutes.

DISCUSSION

Findings from this pilot study indicate that the mDHKS and FFQ need to be shortened and further simplified for our target population. Respondents felt the questionnaires were difficult and too long. Many of the children and parents had problems with the concept of portion size. The HBCU students indicated that more regional and ethnic foods may need to be added to the FFQ. While the Block FFQ included photos of food, three-dimensional food models may have to be used to address this target population’s problems with the concept of portion sizes. The USDA food model book also may be useful because it utilizes two-dimensional pictures as well as cups, spoons, and rulers in an effort to minimize

portion size problems when administering a 24-hour recall (Bliss, 2004; McBride, 2001). Likewise, newer versions of the Block FFQ may be more appropriate for future studies (www.Nutritionquest.com). The newer versions are computer based and age-appropriate. The Block Kids Questionnaire for ages 8–17 is a 77 food item questionnaire, takes approximately 25 minutes to complete, asks individual portion sizes, and provides pictures. The Block Kids Questionnaire for ages 2–7 has approximately 90 questions, takes a caregiver or interviewer 30 minutes to complete, but does not ask individual portion sizes.

Although the Block FFQ appeared to be difficult for the respondents to understand, this determination also warrants further investigation. The students had several problems using the computerized FFQ. Of the five HBCUs that participated in the pilot only one school submitted a complete computerized FFQ dataset and another completed a hard copy. Thus, the reason only 20 FFQs are presented in Table 1. The others had technical difficulties or did not completely follow directions.

The database which supports the FFQ also proved to be too large for the students' laptops. For this study, each school had to provide the student with a laptop. Initially, databases were sent as e-mail attachments, but were too large to be received. Databases then had to be burned to a CD and shipped. Once the students began to enter data, they experienced not having enough memory on their laptops leading them to crash. In the future, the databases will be loaded on laptops and shipped to each university community site. Given all these issues, further pilot testing on an appropriate dietary assessment instrument is needed.

Another limitation was that parents were not always available to help younger children answer questions during the day. Parent participation is especially important for data collection on younger children. For this study, the youngest age group of children required a parent be present. Most of the parents worked and could not take off work. The students learned that scheduling convenient times for parents can be very challenging. While the fruit and vegetable beanie babies were cute, more appropriate incentives for these working parents may have to be provided.

The third limitation dealt with monitoring the students. Although the project included monthly conference calls and Spectel Web Conferencing to train students, mandatory submission of monthly progress reports, and one USDA site visit per HBCU during data collection, additional monitoring is needed for future studies. One of the challenges generally experienced when collecting multi-site data is being able to communicate

regularly with those in the field to ensure effective data collection. The monthly time frame was set to accommodate faculty advisors, community partners, and student schedules. In the future, closer work with the students and weekly communication will be required. However, the monthly conference calls did provide an opportunity to not only interact with students, but also with faculty advisors and community partners to troubleshoot any problems experienced while collecting data.

Implications for Research and Practice

A major strength of this study is that it provided experiential learning in community nutrition research to students at HBCUs. Experiential learning provides learning through applicable experiences and integrates the new information into students' knowledge base for solving simulated or real world problems (Harris, 1998; Fletcher & Branen, 1993; Guthrie & Taylor, 1995). Students were trained on how to form valuable community linkages for the development of effective community based interventions. This is important for all students, particularly for African American students and their respective communities.

An important part of this data collection was the use of community and university partnerships to collect data in five community settings. These settings provide the most effective and efficient way to reach a large segment of the population, young people, school staff, families and community members (Perez-Rodrigo & Aranceta, 2003). The combination of the HBCU and community partnerships could strengthen our ability to collect multi-site data in the future.

A third strength was the use of computer technology, even with the problems described above. In the case where the technology was reliable, the data collection process went very well. One school especially did an exceptional job in collecting data, returning the data in a timely manner, and having no problems with the Block FFQ. This school will be used as the model school when planning future research with students.

The use of computer technology enhanced our ability to collect data in a variety of community settings. Using laptops provided portability of data. In the future, using laptops and other technology (i.e., PDAs, electronic tablets) might prove to be effective tools for collecting data in community settings and provide a chance for interactive learning experiences (Brug et al., 1999; Perez-Rodrigo & Aranceta, 2003; DiSogra & Glanz, 2000).

Many nutrition interventions designed to improve the eating and physical activity behavior of children and adolescents are undertaken without any real understanding of the factors that affect young people's behavior decisions (Shepherd & Dennison, 1996; McKinley et al., 2005). This project incorporates research and education to systematically address diabetes and obesity prevention through nutrition and physical activity in five HBCU communities. For this pilot study, students tested the appropriateness of potential instruments. Additional studies will be conducted to test problems identified by this pilot. The ultimate aim will be to design an effective intervention for African American children and their families which uses appropriate dietary and behavior instruments.

ACKNOWLEDGEMENTS

This project was funded by the Community Nutrition Research Group, Beltsville Human Nutrition Research Center, USDA. Appreciation is extended to the students and faculty advisors at each university site; Kristen Campbell and Mrs. Ann Warren (Alabama A&M University), Cecillia Patterson and Dr. Esther Okeiyi (North Carolina Central University), Tiffanie Yates and Dr. Eleanora Isles (Howard University), Tiffany Williams and Dr. Glenda Johnson (Southern University), and Chellani Hathorn and Dr. Adelia Bovell-Benjamin (Tuskegee University).

REFERENCES

- Avaya, Inc. Spectel DataXchange Web Conferencing Software. Available at www.avaya.com. Accessed in August 2004.
- Bliss, R. M. (2004). Researchers produce innovation in dietary recall. *Agricultural Research*, 52, 10–12.
- Block, G., Wakimoto, P., and T. Block (1998). A revision of the block dietary questionnaire and database, based on NHANES III data. Available at http://www.nutritionquest.com/B98_Dev.pdf. Accessed August 1, 2004.
- Brug, J., I. Steenhuis, P. van Assema, K. Glanz, and H. de Vries (1999). Computer-tailored nutrition education differences between two interventions. *Health Educ Res*, 14, 249–256.
- DiSogra, L., and K. Glanz (2000). The 5 a day virtual classroom: an on-line strategy to promote healthful eating. *J Amer Diet Assoc*, 100, 349–352.

- Fletcher, J., and L. Branen (1993). Experiential learning in a cross-disciplinary student-directed research course. *NACTA J*, 37, 18–22.
- Guthrie, J., and M. Taylor (1995). Teaching ethics to community nutrition students: A case study approach. *J Nutr Educ*, 27, 157B–158B.
- Harris, E. (1998). Integrating experiential learning into the study of nutrition. *J Coll Sci Teaching*, 27, 401–406.
- McBride, J. (2001). Was it a slab, a slice, or a sliver? *Agricultural Research*, 49, 4–7.
- McKinley, M. C., P. J. Robson, J. M. W. Wallace, M. Morrissey, A. Moran, and M. B. E. Livingstone (2005). I's good to talk: children's views on food and nutrition. *Eur J Clinical Nutr*, 59(4), 542–51.
- Nutritionquest. Available at www.Nutritionquest.com. Accessed August 1, 2005 and October 1, 2006.
- Perez-Rodrigo, C., and J. Aranceta (2003). Nutrition education in schools: Experience and challenges. *Eur J Clinical Nutr*, 57(Suppl 1), S82–S85.
- Shepherd, R., and C. M. Dennison (1996). Influences on adolescent food choices. *Proc Nutr Soc*, 55, 345–357.
- USDA, Food Surveys Research Group. Available at <http://www.ars.usda.gov/Services/docs.htm?docid=7776>. Accessed January 30, 2006.

